

Historic, archived document

Do not assume content reflects current
scientific knowledge, policies, or practices.

Reserve

Ag 84L
00

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY

JAN 8 1969

CURRENT SERIAL RECORDS

38

SPIDER MITES ON COTTON

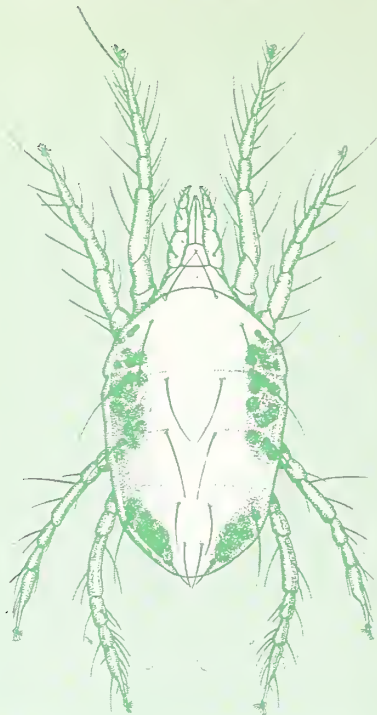
How To Control Them

4

Leaflet No. 502
U.S. DEPARTMENT OF AGRICULTURE

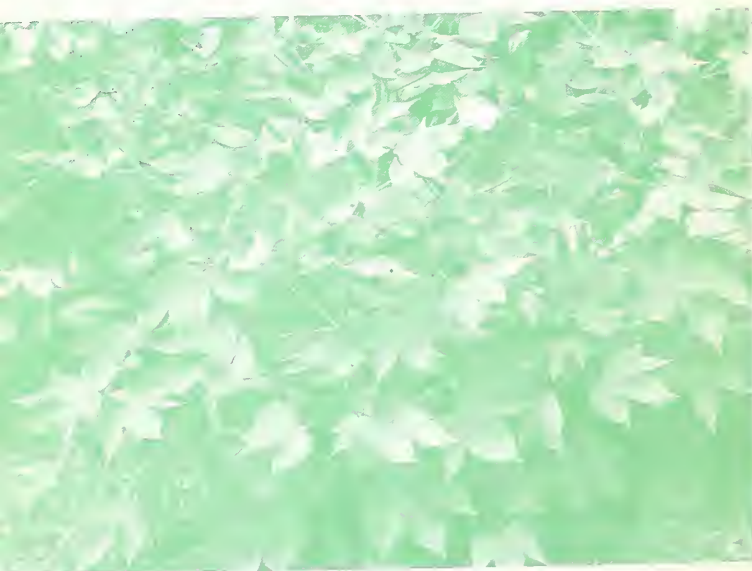
SPIDER MITES ON COTTON

How to control them



BN-13698-X

Spider mite (greatly enlarged).



BN-13571

Mite-infested cotton plant, showing dusty appearance of leaves.

Spider mites, commonly called red spiders, attack many plants. A number of species of these pests attack cotton, and often cause serious damage. The most important ones are:

Carmine spider mite (*Teranychus cinnabarinus*).

Desert spider mite (*T. desertorum*).

Lobed spider mite (*T. lobosus*).

Pacific spider mite (*T. pacificus*).

Schoene spider mite (*T. schoenei*).

Strawberry spider mite (*T. atlanticus*).

Tumid spider mite (*T. tumidus*).

Two-spotted spider mite (*T. urticae*).

The mites are tiny—barely visible to the naked eye. Some are red, but many are green, orange, or straw colored.

Spider mites usually are kept under control by weather, beneficial insects that kill the mites, and other species of mites that prey on them. Outbreaks of spider mites are most likely to occur following application of pesticide that destroys the beneficial insects and mites.

DEVELOPMENT AND HABITS

Spider mites develop in five stages—egg, larva, two nymphal stages, and adult.

Females are able to reproduce without mating; when they do, the offspring always are males.

Where winters are mild, as in the cotton-growing regions of the United States, spider mites may remain active and reproduce throughout the year. Under favorable conditions, some species complete a generation in 7 to 12 days. As many as 16 generations may occur in a year.

Spider mites may attack cotton at any stage of its growth, but usually they are most injurious from about July 1 until early September. Infestations are prevalent during periods of hot, dry weather. They may be detected by inspecting the undersurfaces of leaves of plants in different parts of the field—particularly in areas that were infested in previous years.

Severe infestations may be recognized by dust collecting in webs that the pests spin over leaf surfaces for protection as they feed and lay eggs. Such infestations may enclose plant terminals in webbing.

Spider mites damage cotton in all active stages of their life cycle. Larvae, nymphs, and adults suck the juices from leaves, stems, and fruits of the plants. Their feeding causes plant parts to become blotched or stippled, and causes leaves to become discolored and drop prematurely. When plants are severely attacked, they may become defoliated and devitalized.



BN-13572

Cotton leaves, showing characteristic stippling made by spider mites.

CONTROL WITH MITICIDE

You can control spider mites by applying the proper miticide.

Selecting Miticide

Some species of mites have become resistant to certain miticides. To select the right chemical, you need to know the species that is attacking your cotton and whether it is resistant to some miticides. Only a specialist can definitely identify a species. Your county agricultural agent has or can obtain information on the species occurring in your area. He can assist you in selecting the proper miticide.

Recommended miticides, listed according to the species against which they are effective, are as follows:

<i>SPECIES</i>	<i>MITICIDES</i>
<i>Carmine</i> -----	Bidrin, carbophenothion, chlorobenzilate, demeton, dicofol, ethion, methyl parathion, parathion, sulfur, tetradifon.
<i>Desert</i> -----	Bidrin, carbophenothion, chlorobenzilate, demeton, dicofol, ethion, methyl parathion, parathion, sulfur, tetradifon.
<i>Lobed</i> -----	Bidrin, carbophenothion, demeton, dicofol, ethion, parathion, sulfur.
<i>Pacific</i> -----	Chlorobenzilate, demeton, dicofol, tetradifon.
<i>Schoene</i> -----	Bidrin, carbophenothion, chlorobenzilate, demeton, dicofol, ethion.
<i>Strawberry</i> -----	Bidrin, carbophenothion, chlorobenzilate, demeton, dicofol, ethion, sulfur.
<i>Tumid</i> -----	Bidrin, carbophenothion, chlorobenzilate, demeton, dicofol, ethion, parathion, sulfur.
<i>Two-spotted</i> -----	Bidrin, carbophenothion, chlorobenzilate, demeton, dicofol, ethion, methyl parathion, parathion, sulfur, tetradifon.

Miticides for controlling spider mites on cotton

Miticide	Formulation ¹	Amount of active ingredient to apply per acre
		Pounds
Bidrin.....	EC	0.1 to 0.5
Carbophenothion.....	D or EC	.25 to 1
Chlorobenzilate.....	D or EC	.5 to 1
Demeton.....	EC	.25 to .38
Dicofol.....	D or EC	.5 to 1.6
Disulfoton ²	G	.5 to 1
Disulfoton ³	D or EC	.5
Ethion.....	D or EC	.25 to 1.2
Methyl parathion.....	D or EC	.25 to .5
Parathion.....	D or EC	.1 to .25
Phorate ²	G	.5 to 1
Phorate ³	D or EC	.25 to 1.5
Sulfur.....	D	20 to 35
Tetradifon.....	D or EC	.5 to 1

¹ D=dust; EC=emulsifiable concentrate; G=granules.

² Furrow treatment at planting.

³ Seed treatment per hundredweight of planting seed.

If spider-mite infestations are chronic or persistent in your area, a suitable miticide may be included in all insecticide applications made from mid-July through the remainder of the season.

Applying Miticide

Start miticide applications when you first notice a damaging infestation. One application may be sufficient, but frequently two or more are needed to maintain satisfactory control.

Before applying miticide, or a combination of miticide and insecticide, calibrate your application machinery: make sure it will distribute the proper amount of active ingredient to each acre.

Do not apply miticides when the wind is blowing sufficiently to cause the pesticide to drift away from the area being treated.

Each year, the Extension Service in each cotton-growing State issues a detailed guide for controlling cotton pests. Refer to it for latest information, and for information that applies particularly to your area.

PRECAUTIONS

Miticides used improperly can be injurious to man and animals. Use them only when needed and handle them with care. Follow the directions and heed all precautions on the labels.

Some States have special restrictions on the use of certain miticides. Before applying miticides, check State and local regulations.

Keep miticides in closed, well-labeled containers in a dry place. Store them where they will not contaminate food or feed, and where children and animals cannot reach them. Promptly dispose of empty miticide containers; do not use them for any other purpose.

When handling a miticide, wear clean, dry clothing.

Avoid repeated or prolonged contact of miticide with your skin.

Wear protective clothing and equipment if specified on the container label. Avoid prolonged inhalation of miticide dusts or mists.

Avoid spilling a miticide concentrate on your skin, and keep it out of your eyes, nose, and mouth. If you spill any on your skin or clothing, remove contaminated clothing immediately and wash the skin thoroughly with soap and water. Launder the clothing before wearing it again.

After handling a miticide, do not eat, drink, or smoke until you have washed your hands and face. Wash any exposed skin immediately after applying a miticide.

Avoid drift of miticide to nearby wildlife habitats, bee yards, crops, or livestock. Do not apply miticides under conditions favoring drift from the area to be treated.

Many miticides are highly toxic to fish and aquatic animals. Keep miticides out of all water sources such as ponds, streams, and wells. Do not clean spraying equipment or dump excess spray material near such water.

Do not apply miticides to plants during hours when honey bees and other pollinating insects are visiting them. Notify beekeepers at least 48

hours before dusting or spraying so that measures can be taken to protect bees.

Bury empty miticide containers at a sanitary land-fill dump, or crush and bury them at least 18 inches deep in a level, isolated place where they will not contaminate water supplies.

Bidrin, carbophenothion, demeton, methyl parathion, and parathion are highly toxic. Be especially careful when applying them.

Workers entering cotton fields on the day plants are treated with methyl parathion should wear clean, tightly woven, protective clothing.

Minimum days to be allowed from last application to harvest are 10 for Bidrin, 14 for dicofol, and 21 for demeton.

When using methyl parathion and parathion, allow 5 days to pass after spraying before hand harvesting.

Mention of a proprietary product in this publication does not constitute a guarantee or warranty of the product by the U.S. Department of Agriculture and does not imply its approval by the Department to the exclusion of other products that may also be suitable.



Use Pesticides Safely
FOLLOW THE LABEL
U.S. DEPARTMENT OF AGRICULTURE

Prepared by

Entomology Research Division

Agricultural Research Service

5 Washington, D.C.

Issued February 1962

4 Slightly revised November 1968

For sale by the Superintendent of Documents

U.S. Government Printing Office, Washington, D.C. 20402

Price 10 cents

U.S. GOVERNMENT PRINTING OFFICE: 1968 O—321-389

